

ARASH ZANDIEH

Ph.D. Candidate, E.I.T.

Contact Information

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Education

- Ph.D. in Civil Engineering, The University of Memphis, May 2011 expected.
- M.S. in Civil Engineering, University of Tehran, Tehran, Iran, 2006.
- B.S. in Civil Engineering, AmirKabir University of Technology, Tehran, Iran, 2004 .

M.S. Thesis: Simulation of Earthquake Ground Motions Using Wavelets and Comparison with Common Methods

Ph.D. Dissertation: Ground-Motion Prediction Equations and Seismic Hazard Analysis in Central and Eastern North America

Active Research

- Ground-motion prediction equations for Central and Eastern United States
- Probabilistic seismic hazard analysis (PSHA)
- Investigation of the path effect in the New Madrid seismic zone (NMSZ)
- Study of the source spectra in the NMSZ
- Seismic site specific studies
- Engineering seismology
- Study of site effects using the H/V spectral ratios
- Stochastic method of ground-motion modeling
- Seismic assessment and rehabilitation of existing structures
- Seismic design of structures

Publications and Presentations

Journal Papers:

- Pezeshk, S., Zandieh, A., and B. Tavakoli (2011). Hybrid Empirical Ground-Motion Prediction Equations for Eastern North America Using NGA Models and Updated Seismological Parameters, *Bulletin of the Seismological Society of America* (in press).
- Zandieh, A., and S. Pezeshk (2010). Investigation of Geometrical Spreading and Quality Factor Functions in the New Madrid Seismic Zone, *Bulletin of the Seismological Society of America*, **100**, 2185–2195.
- Zandieh, A., and S. Pezeshk (2010). A Study of the Horizontal-to-Vertical Component Spectral Ratio in the New Madrid Seismic Zone, Submitted to *Bulletin of the Seismological Society of America* (in press).
- Zandieh, A., and S. Pezeshk (2010). A Study of Source Spectra for the April 2008 Mount Carmel, Illinois, Earthquake, In preparation for submission to *Bulletin of the Seismological Society of America (BSSA)*.

Proceedings and Presentations:

- Zandieh, A. (2011). Procedures and Codes for the Seismic Evaluation of Existing Buildings, Speaker in the Principle of Seismic Design seminar, February 17, 2011, Memphis, TN.
- Zandieh, A., and S. Pezeshk (2011). Quantification of Parametric Uncertainty in Stochastic Ground-Motion Modeling For Eastern North America, Poster presentation in 2011 Annual Meeting of the Earthquake Engineering Research Institute (EERI), 9-12 February, 2011, San Diego, California.
- Zandieh, A., and S. Pezeshk (2010). Parametric Uncertainty in Seismological Ground Motion Model For Eastern North America, Poster presentation in 2010 Annual Meeting (82st) of the Eastern Section of the Seismological Society of America (ES-SSA), October 17-19, 2010, Chestnut Hill, Massachusetts (**Won the Best Student Poster Award**).
- Zandieh, A., and S. Pezeshk (2010). Uncertainty in Numerical Ground-Motion Predictions, Presentation in Technical Meeting of the University of Memphis Earthquake Engineering Research Institute (EERI) Student Chapter.
- Zandieh, A., and S. Pezeshk (2010). A study of the Path Effect and Source spectrum from Small and Moderate Earthquakes in the New Madrid Seismic Zone, Poster presentation in 2010 Annual Meeting of the Earthquake Engineering Research Institute (EERI), 3-6 February, 2010, San Francisco, California.

- Zandieh, A., and S. Pezeshk (2010). New Ground-Motion Prediction Equations for Central and Eastern United States, Poster presentation in 2010 Annual Meeting of the Earthquake Engineering Research Institute (EERI), 3-6 February, 2010, San Francisco, California.
- Zandieh, A., and S. Pezeshk (2009). Updated Ground-Motion Prediction Equations for Eastern North America Using Hybrid Empirical Method, Poster presentation in Meeting of Central and Eastern US (CEUS) Earthquake Hazard Program by USGS, October 28-29, 2009, University of Memphis, Memphis, Tennessee.
- Zandieh, A., and S. Pezeshk (2009). Geometrical Spreading and Quality Factor Functional Form for New Madrid Seismic Zone, Poster presentation in 2009 Annual Meeting (81st) of the Eastern Section of the Seismological Society of America (ES-SSA), October 5-6, 2009, Palisades, New York (**Won the Best Student Poster Award**).
- Pezeshk, S., and A. Zandieh (2009). Updated Ground-Motion Prediction Equations for Eastern North America Using Hybrid Empirical Method, Presentation in Advancing new Madrid region time-history determination, Shlemon Specialty Conference, June 3-5, 2009, Memphis, Tennessee.
- Zandieh, A., and R. Vaezi (2007). Analysis of earthquake ground motion records at liquefied sites using wavelet transform, in Proceeding of COMPDYN 2007, 13-15 June 2007, Rethymno, Crete, Greece.
- Zandieh, A., and J. Farjoodi (2006). Ground motion simulation based on wavelet transform and neural networks, in Proceeding of First European Conference on Earthquake Engineering and Seismology, Geneva, Switzerland.

Professional Experiences

- **Since 2010: University of Memphis**
 - Teacher assistant for Mechanics of Material Lab, Department of Civil Engineering, University of Memphis, Memphis, Tennessee.
- **Since 6/2010: University of Memphis**
 - Consultant Engineer in Seismic Evaluation of John Madison Exum Towers Phase I and II, Memphis, Tennessee.
- **9/2005 –5/2007: Imen Saze Fadak Consultant Engineering Company**
 - Consultant Engineer in Bojnoord cement plant, Iran.
- **9/2005 –5/2007: Tosehe-Omran Consultant Engineering Company**
 - Consultant Engineer in Assessment and Rehabilitation studies of Hazrat-Rasool hospital, Tehran, Iran.
 - Consultant Engineer in Assessment and Rehabilitation studies of Haft-e-Tir hospital, Tehran, Iran.

- Consultant Engineer in Assessment and Rehabilitation studies of Baharloo hospital, Tehran, Iran.
- **7/2005 – 9/2005: Tosehe-Omran Consultant Engineering Company**
- Consultant Engineer in Assessment and Rehabilitation of Surveying and Geographical Studies Building of Iran , Tehran, Iran.

Ph.D. Course Work

- Geotechnical Earthquake Engineering
- Seismology
- Earthquake Resistance Design
- Data Analysis in Geophysics
- Advanced Topics in Geophysics (Seismic Hazard Analysis)
- Signal Processing in Earth Sciences
- Probabilistic Methods in Engineering
- Engineering Analysis
- Computational Mechanics (Finite Element Method)
- Intermediate Steel Design
- Intermediate Concrete Design
- Plastic Design

Awards and Honors

- Travel grant award to attend the 2011 annual meeting of Earthquake Engineering Research Institute (EERI).
- The recipient of the best student poster award, 2010 Annual Meeting (82st) of the Eastern Section of the Seismological Society of America (ES-SSA).
- Travel grant award to attend the 2010 Annual Meeting (82st) of the Eastern Section of the Seismological Society of America (ES-SSA).
- Travel grant award to attend the 2010 annual meeting of Earthquake Engineering Research Institute (EERI).
- Travel grant award to attend the 2010 annual meeting of Earthquake Engineering Research Institute (EERI) Student Leadership Council (SLC).
- Travel grant award to attend the 2009 annual meeting of Earthquake Engineering Research Institute (EERI) Student Leadership Council (SLC).
- The recipient of the best student poster award, 2009 Annual Meeting (81st) of the Eastern Section of the Seismological Society of America (ES-SSA).
- President of the University of Memphis EERI student chapter, since 2008.

- Graduate student representative at The University of Memphis, Department of Civil Engineering Graduate Curriculum, Admissions, and Retention Committee, since 2010.

Affiliations

- EERI; Student Member and President of The University of Memphis EERI Student Chapter
- ASCE; Student Member
- AISC; Student Member

Computer Knowledge

- Civil Engineering Software:
SAP2000, Etabs2000, SAFE2000, Plaxis, SHAKE90
- Engineering Seismology:
SMSIM, FINSIM, EXSIM, SAC
- Programming:
Fortran, Matlab, MathCAD, and Visual Basic
- CAD and Architecture:
AutoCAD 2000

References

- **Dr. Shahram Pezeshk**, Chair and Emison Professor of Civil Engineering, The University of Memphis, Memphis, TN 38152, Phone: (901) 678-4727, spezeshk@memphis.edu.
- **Dr. Chris Cramer**, Research Associate Professor, Center for Earthquake Research and Information (CERI), The University of Memphis, Memphis, TN 38152, Phone: (901) 678-4992, ccramer@memphis.edu.
- **Dr. Behrooz Tavakoli**, Engineering Seismologist, Bechtel Corp., Geotechnical & Hydraulic Engineering Services, MD 21703, Phone: (301) 228-6469, btavakol@bechtel.com.